ABSTRACT

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IMPLEMENTATION OF YOLOV8 ALGORITHM FOR DIAGNOSING DISEASES IN GRAPE PLANTS

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Keywords: YOLOv8, Black Rot, Esca Black Measles, Object Detection, Grape Plant Diseases.

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Grapes are one of the fruits that are processed into various products, such as juice, fruit salad, and other processed products. However, grape plants are also susceptible to diseases that can cause significant losses. Diseases in plants can be observed in the texture and color of the leaves. Therefore, identifying diseases in grape leaves is crucial to preventing the spread of diseases that can lead to reduced harvest yields. The role of technology today has become very helpful and is applied in all aspects of human life, including machinery and even AI (Artificial Intelligence). The combination of AI and machinery can be used to increase work efficiency. Object detection systems are one example of AI applications that use deep learning methods to identify the presence of objects. One application of object detection is detecting diseases in grape plants. The diseases focused on in this research are Black Rot and Esca Black Measles. These two diseases are often found in grape plants and pose a threat, and they can be identified through the visualization of grape leaves. The application of disease detection in grape plants aims to allow users to identify the type of disease in grape plants simply by observing the leaves. The researcher applies the YOLOv8 algorithm for disease detection through images of grape leaves. The data used in model training consists of 5,370 images, divided into 4,296 images for training data and 1,074 images for validation data, with an 80:20 ratio. The model training process will be conducted over 50 epochs. The accuracy result obtained from the YOLOv8 model is 99.3%, indicating that the accuracy value is consistent with the input dataset.

Bibliography (2003 – 2023)